Application No. 09/265,601
Attorney Ref. No. 3364P010

PROPOSED CLAIM AMENDMENTS

1. (Four Times Amended) A negative active material for a lithium secondary battery, comprising a heat-treated graphite carbon material having an intensity ratio I(110)/I(002) of an X-ray diffraction peak intensity I(002) at a (002) plane to an X-ray diffraction peak intensity I(110) at a (110) plane of less than 0.2, the negative active material prepared by

dissolving a coal tar pitch or a petroleum pitch in an organic solvent to remove organic-insoluble components therefrom and to obtain organic-soluble components;

heat-treating the organic-soluble components at a temperature in the range of 400 to 450 °C for 4 hours or more under an inert atmosphere to thereby produce at least 50 weight percent of mesophase particles based on the pitch;

coking the pitch including mesophase particles;

carbonizing the coked pitch;

pulverizing the carbonized pitch; and

graphitizing the pulverized pitch at a temperature higher than 2500°C.

NM, must state 2500-3000°C (see page 6)

2. (Amended) The negative active material of claim 1 wherein the graphite carbon material has an intensity ratio I(110)/I(002) of less than 0.04.

3. (Four Times Amended) A lithium secondary battery comprising:

a negative electrode comprising a negative active material;

a positive electrode comprising a lithium containing material that can reversibly intercalate and de-intercalate lithium ion; and

a non-aqueous electrolyte;

the negative active material comprising a heat-treated graphite carbon material having an intensity ratio I(110)/I(002) of an X-ray diffraction peak intensity I(002) at a (002) plane to an X-ray diffraction peak intensity I(110) at a (110) plane of less than 0.2 and the negative active material prepared by

dissolving a coal tar pitch or a petroleum pitch in an organic solvent to remove organic-insoluble components therefrom and to obtain organic-soluble components;

heat-treating the organic-soluble components at a temperature in the range of 400 to 450 °C for 4 hours or more under an inert atmosphere to thereby produce at least 50 weight percent of mesophase particles based on the pitch;

coking the pitch including mesophase particles;

carbonizing the coked pitch;

pulverizing the carbonized pitch; and

graphitizing the pulverized pitch at a temperature higher than 2500°C.

NM (page 6)

4. (Amended) The lithium secondary battery of claim 3 wherein the graphite carbon material has an intensity ratio I(110)/I(002) of less than 0.04.

5. (Twice Amended) A method of preparing a negative active material for a lithium secondary battery, comprising the steps of:

dissolving a coal tar pitch or a petroleum pitch in an organic solvent to remove organic-insoluble components therefrom and to obtain organic-soluble components;

only after dissolving the pitch in the organic solvent, heat-treating the organic-soluble components at a temperature in the range of 400 to 450 °C for 4 hours or more under an inert atmosphere to thereby produce at least 50 weight percent of mesophase particles based on the pitch;

coking the pitch including mesophase particles;

carbonizing the coked pitch;

pulverizing the carbonized pitch; and

graphitizing the pulverized pitch at a temperature higher than 2500°C.

6. The method of claim 5 wherein the inert atmosphere is a gaseous nitrogen or argon atmosphere.

Received from < 3108205988 > at 9/3/02 6:39:23 PM [Eastern Daylight Time]

7. The method of claim 5 wherein the mesophase particles are produced by 50 to 98 weight percent based on the pitch.

8. The method of claim 5 wherein the coking step is performed at a rising temperature up to 600 °C under an inert atmosphere.

BLAKELY
SOKOLOFF
TAYLOR &
ZAFMAN LLP

12400 Wilshire Boulevard, Seventh Floor
Los Angeles, California 90025-1026
Telephone: (310) 207-3800
Facsimile: (310) 820-5988 or 820-5270

FACSIMILE TRANSMITTAL SHEET

Deliver To: Tracy Dove

Firm Name: USPTO

~~Telephone:~~ FAX 703-872-9517

From: Raul Martinez

Date: 9/3/02 Time: 3:30 pm

Total Number of Pages, Including Cover Sheet: 5

Operator: RDM Client & Matter #: 3364P010

Subject:
Proposed claim amendments for
Application No. 09/265,601

CONFIDENTIALITY NOTE: The documents accompanying this facsimile transmission contain information from the law firm of Blakely, Sokoloff, Taylor & Zafman which is confidential or privileged. The information is intended to be for the use of the individual or entity named on this transmission sheet. If you are not the intended recipient, be aware that any disclosure, copying, distribution or use of the contents of this faxed information is prohibited. If you have received this facsimile in error, please notify us by telephone immediately so that we can arrange for the retrieval of the original documents at no cost to you.

If you do not receive all the pages, or if there is any difficulty in receiving, please call: (310) 207-3800 and ask for the operator named ab ve.